

The

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# THE ATLANTA ECONOMIC REVIEW

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## This Month's Authors

### JOHN M. CHAMPION

Dr. Champion's article points out the importance of "human engineering" in present-day scientific efforts toward work simplification. He emphasizes the need for the machine to be designed to adapt to man's abilities and limitations, taking into account the various physiological, perceptual, intellectual, and psychological characteristics of the individual.

Dr. Champion is Assistant Professor of Management, School of Business Administration of Georgia State College of Business Administration, and a licensed Applied Psychologist in Georgia.

### WARREN A. WALKER

In "The Southeastern Corner" this month Mr. Walker points out the progress and extent of production in the Southeast in certain industrial activities: worsted spinning, sulfuric acid, phosphatic fertilizers, utilities and transportation, and foreign trade.

The diversification of industry in the Southeast is illustrated by the number of activities shown for the Atlanta Metropolitan Area alone.

### JOHN L. FULMER

Dr. Fulmer, Professor of Industrial Management, Georgia Institute of Technology, begins a three-part series of articles on a subject of supreme interest to all Georgians particularly: the challenge of economic development in the state. Dr. Fulmer points out specific features of an aggressive development program, stressing the great degree of

dependency of such a program on sound economic analysis applied to companies of medium and small size in the state.

Part II of this series, "Help for Rural Counties," will appear in next month's issue of **The Atlanta Economic Review**.

### STEPHEN PARANKA

Using the 1958 Survey of Consumer Purchase Plans of Metropolitan Atlanta, Dr. Paranka points out certain significant differences between purchasing plans of the urban and the suburban consumer. He suggests that as an aid to the marketing of specific products, consumer purchase surveys might be made showing separate data for the urban and the suburban market.

Dr. Paranka is Associate Professor of Marketing, School of Business Administration of Georgia State College of Business Administration.

### OTHA L. GRAY

Stockholders as well as corporation officers and directors will find Mr. Gray's article on the principles of corporate dividend declaration of great interest. In another article to appear subsequently in **The Atlanta Economic Review**, Mr. Gray will consider the specific provisions of Georgia statutes in regard to their adequacy in meeting the standards for dividend regulation as discussed in the current paper.

Mr. Gray is Associate Professor of Accounting, School of Business Administration of Georgia State College of Business Administration.

*"Adapt the machine to fit the man, rather than . . . the man to fit the machine."*

# HUMAN ENGINEERING

by

John M. Champion

Since man first started recording his progress, we have read and heard of his attempts to simplify and improve his work environment in order that the most economical use of human effort might be achieved. Prior to the nineteenth century most of these attempts were conducted on a somewhat trial-and-error or learn-by-experience basis. Attempts today to improve the work situation by scientifically finding more efficient methods of performing human tasks are known as "work simplification."

### The Early Pioneers

Scientific efforts to simplify the work environment probably found their greatest impetus through the work of that pioneer of scientific management, Frederick Winslow Taylor. Taylor's efforts have resulted in recommendations that include the best way to do a job, the time that should be required to perform a unit of work, methods of determining what constitutes a full day's work, incentive pay, rest pauses, central planning, and functional management. These contributions toward making the work environment simpler, more efficient, and more comfortable will always be regarded as sufficient cause to place the name of Taylor among the nobles in the work-simplification hall of fame.

Work simplification found other support through the work of the Gilbreths. Frank Gilbreth, an industrial engineer, and Lillian Gilbreth, a professional psychologist, combined their professional training and made studies of various operations and occupations, notably that of bricklaying, which have led to recommendations regarding methods of performing work with less physical exertion. The work of the Gilbreths, supplemented by that of Mundel, Lauer, and Brouha, has resulted in a group of principles regarding motions and exertion of energy that enable one to determine the best way of performing work.

Another aspect of the movement directed toward improving the work environment has been the contributions made by the industrial psychologists during, and in the years that have followed, World War I. The early work was initiated by Muensterberg and Mayo, and has been carried on by such men as Otis, Seashore, Bingham, Thorndike, and Tiffin. These individuals have sought to apply their knowledge of human behavior to the problems involved in improving the work environment; as a result, recommendations are now made to managers with considerably more meaning and confidence than previously regarding such functions as selection, placement, training, merit rating, and morale improvement.

A result of man's concern and preoccupation with

improving and simplifying his work environment has been a steadily increasing vocabulary of work-simplification terms, of which a few are: work sampling, process chart, ratio-delay, chronograph, therblig, ergometer, clo unit, standard time, stanine, chronocyclegraph, flow diagram, man-machine chart, michronometer, and bimanual symmetry.

### **Human Engineering**

A term which has only recently become a part of the work-simplification vocabulary, but one which is rapidly becoming a most significant addition, is "human engineering." The choice of this term to describe a most rewarding endeavor in the area of work simplification has been somewhat unfortunate since there has been much disagreement and lack of acceptance regarding its use. Other terms such as bio-mechanics, human factors, engineering for human use, and psychophysical systems research have been suggested by various individuals and organizations to replace the term human engineering. However, since it appears that this term is the one destined to be preferred eventually, it will be the one used in this report to designate the endeavor to be discussed.

Human engineering refers to the adaptation of human tasks and working conditions to the physical, perceptual, intellectual, and psychological characteristics and limitations of the individual. The human engineer directs his attention to the thought that man and machine are working toward a common goal, and that the man-machine system can be made more efficient by placing more emphasis on adapting the machine to fit the man, rather than adapting or selecting the man to fit the machine. The emphasis in this particular area of work simplification is therefore somewhat different from that which had been placed earlier on work simplification problems. In the case of human engineering the worker is treated as a constant and the machine as a variable, instead of the worker a variable and the machine a constant.

The human engineering profession consists largely, at present, of psychologists, due to their interest in and knowledge of the behavioral characteristics of workers. In addition, the training of psychologists in statistical techniques and experimental designs involving man and his adaptation to the work situation has placed them in a position to conduct original research, analyze existing research, and consult with design engineers regarding adaptation of the machine to the man. The profession is by no means limited to the psychologist, however, since a human engineer must address himself to the task of applying research findings in the areas of physiology, psychology, anthropology, medicine, management, and engineering to the design of human tasks and work environments. The area of human engineering therefore appears to be somewhat interdisciplinary, with contributions to be made from many sources. The human engineer has thus far

concerned himself with problems existing in the areas of work equipment and machines, work methods and processes, work environment, and consumer products. In effect then, the human engineering profession is concerned with the design of the man-machine system with the limitations of the man a paramount consideration. The man-machine system may be considered to include anything from a hammer to a space missile.

### **The War Stimulus**

It was the military man-machine system of the World War II and post-World War II era that gave impetus to this particular endeavor of designing human tasks and working conditions, in this case complex weapon and equipment systems, so that a human being could perform the work required with efficiency and with a minimum of effort. It had been realized by our military geniuses early in the conflict that efficient operation of equipment, machines, and weapons was, and would be, retarded because of the complexity of design of such man-machine systems. Instead of having the operator attempt to adapt to the weapon, in many cases a requirement far beyond his capacity, the military sought to design the weapon in such a way that the weapon was adapted to the capacities and limitations of the operator. As more and more data were accumulated regarding the conditions under which man is efficient and inefficient as a result of various limitations, it was realized that human engineering offered a significant contribution to work simplification in the military situation.

One of the early advocates of human engineering was Dr. Jack Dunlap, now of Dunlap and Associates. In an address before the Division of Industrial and Business Psychology of the American Psychological Association, Dr. Dunlap emphasized that, because of atomic energy utilization, in the near future man will fly through space at supersonic speeds, explore surfaces below oceans, inhabit arctic zones, and in these strange environments be confronted with new and unique problems. For example, Dr. Dunlap states, "Consider a simple problem in vision in thrust craft operating at a speed of 2,000 miles per hour, or about 3,000 feet per second. Visual stimuli initiate nerve impulses which reach the optic cortex in about 0.05 seconds. If an observer in such a craft were to look at an object directly abeam, he would have flown 150 feet beyond it before his brain registered the stimulus." (Ref. 2.) Thus, a real challenge faces the designers of control devices of such craft if the operator is to govern its flight.

These problems are being met by the human engineers as they seek to determine the effects on performance of such conditions as varied illumination, colored controls, placement and arrangement of control devices, noise, atmospheric conditions, body orientation, acceleration forces, and varied types of visual and auditory displays. The human engineer

further has attempted to define and clarify the limitations and capabilities of the individual relative to physiological, perceptual, intellectual, and psychological characteristics. As these data are made available through published studies, a significant contribution is made to the area of work simplification.

#### **Basic Considerations for Human Engineering**

The skills of the human engineer have been applied predominantly to military problems, and as a result we are now only on the threshold of realizing the potential that human engineering has to offer to industrial and marketing problems. Some of the concepts or considerations deemed important by the human engineer in attempting to adapt the machine to man will be discussed in the following paragraphs.

1. Make a complete analysis and identification regarding the **nature of the proposed man-machine system**. Clear and concise information is essential regarding such matters as the purpose of the system, what will be accomplished by the system, what operations will be performed, and what the criteria will be by which the effectiveness of the system is judged.

The determination of the various operations to be performed by the system will necessitate reflection pertaining to the ultimate assignment of the operations to be performed to that component of the system, man or machine, most capable of performing the operation. On the basis of recent research (Ref. 5), it appears that man is more efficient than machine in performing such activities as reasoning, exercising judgment, storing large amounts of data for long periods with subsequent recall at appropriate times, reaction in emergency situations, and perception of certain stimuli. The machine appears to be more efficient than man in performing activities requiring quick and accurate computations, repetitious and routine operations, application of smooth and precise force, immediate response to control signals, storage of information for short periods with subsequent complete erasing, and simultaneous performance of many different functions.

The task that faces the human engineer appears to be that of making recommendations to the industrial designer that will capitalize on human strengths and supplement human weaknesses. A complete analysis of the proposed system, including a statement regarding its nature, provides an essential basis for this task and additional considerations that follow.

2. Consider the **physiological capacities and limitations of the individual** that will be important in the effective performance of the task. Included in this area are such physical dimensions as height, weight, body size, arm length, and motor or muscle characteristics involving speed, accuracy, strength, and reaction time of various body members. These physiological characteristics are of particular im-

portance in the design of the work environment in terms of space that will be needed to perform the operations, and the design and arrangement of visual displays, controls, equipment, and machines.

Two sources relating to revealing information regarding this consideration, as well as other considerations that follow, are available to the researcher. One source involves the results of human engineering research studies conducted in both military and industrial situations and published in professional journals or in the form of monographs and special brochures. Several attempts have been made recently to bring together the best of these studies into one volume and extract from them various principles for the guidance of other researchers in the area of human engineering. Some of these sources are listed in the reference section at the conclusion of this article.

A second source of information available to the human engineer involves the results of his own original experimental research. It may be necessary or advisable, due to the unique nature of the particular man-machine system, to perform original research to supplement available research regarding the extent to which various physiological characteristics influence the successful performance of the individual in the particular work situation under examination.

Fortunately there are available much useful data regarding human physical capacities and limitations considered important in fitting the machine to the operator.

***Anthropological Characteristics.*** Anthropological measurements relative to height, weight, and body size have been accumulated and expressed in many forms—in many instances as a statistical “average” man. Automobile manufacturers have made use of these data in the design of seats, operating controls, and other interior dimensions. The overlooking of the variability of anthropological measurements and attention to the quantitative average only has led to some problems in the design of man-machine systems. (Automobile buyers over six feet tall have found trouble fitting into some modern automobiles, while farmers of less than average height have found themselves unable to reach controls of some farm machinery.)

***Characteristics of Movement.*** Motor capacities, or muscle activities, of the individual are a physiological characteristic extremely worthy of consideration in most, if not all, human engineering studies. These characteristics of movement are especially important in the selection, design, and position-placement of controls, pedals, levers, knobs, selector switches, cranks, and other aspects of the physical environment that affect fatigue, comfort, and efficiency of the operator. As a result of research in this area, significant information has been revealed regarding the speed, accuracy, and strength of various movements. Recommendations can be made to

the designer of the system regarding positioning and regarding repetitive, continuous, serial, and static movements which will lead to specific decisions pertaining to such matters as: the superiority of various types of cranks, handwheels, levers, and knobs; the efficiency of inward and outward movements, push and pull movements, up and down movements, left and right movements; the time required to begin an action after receiving certain types of feedback information; the strength of shoulder, arm, elbow, and hand movements; effectiveness of seated as opposed to standing positions; and one-handed as opposed to two-handed positioning movements.

The standard typewriter keyboard is a man-machine system that apparently was not fitted to the operator when first designed. Various keys grossly overwork the weakest fingers and result in errors and fatigue for the operator. Redesigned keyboards placing keys that must be tapped most often below those fingers that are most dexterous and strong have been proposed as being more efficient than the keyboard now in use.

3. Consider the **perceptual capacities of the individual** as they relate to the particular work situation. In particular, the sense modalities involved in perception of visual and auditory stimuli are of interest to the human engineer due to the importance of such modalities as information-gathering agencies.

The work situation should be designed in such a way that unnecessary burden will not be placed on the visual skills of the operator. The individual is limited in his ability to perceive detail at both near and far distances, to converge symmetrically upon an object at near and far distances, to discriminate differences in distance, and to discriminate between colors. These skills are known as acuity, phoria, stereopsis or depth perception, and color sensitivity, respectively. In addition it has been found that various environmental conditions, such as illumination of objects, brightness of objects, differences in brightness of objects in relation to their background, time allowed to see the object, color contrast, and angle of the object, influence the capacity of the operator to see clearly and interpret correctly the objects to be viewed. Some data have been collected from research studies regarding the above-mentioned conditions that are most conducive to efficient performance and also to environmental conditions most preferred by workers.

**Visual Capacities.** These data have led to recommendations in system design pertaining to optimum level of illumination, glare reduction, color schemes and marking, and visual displays. The designer of visual displays in particular will find useful research regarding the speed and accuracy of readings made by the operator from dials and instruments using different designs, varying marker

graduations and designations, and varying numeral and letter sizes. This type data, in addition to considerations such as the type of reading—quantitative, qualitative, or check—to be made from the display and necessity for speed or accuracy of information observed, determines and influences design and arrangement of visual displays.

**Auditory Capacities.** Consideration of the auditory capacity of the individual that must operate the system should bear fruitful results when communication is an essential element of the system. The human engineer will find available reports of research regarding the effectiveness and shortcomings of various types of auditory signals, the system by which signals are transmitted, and the actual message design as they relate to the receiver and his capacity to discriminate or differentiate various signals. Attention to the effects of noise and its control is an important consideration, due to the effects that adverse sound conditions may have on discrimination of auditory signals. Some research has been directed toward discovering the sense modality most adaptable to communications under adverse sound conditions.

**Other Sense Modalities.** While the bulk of research in the area of perceptual capacities relates to perception of visual and auditory stimuli, the extent to which other sense modalities may be important to the success of the particular man-machine system being studied should not be overlooked. For example, the sense of touch can be utilized in the design of controls, especially through shape coding of control knobs or handles, to supplement further the information gained by the operator through other sense modalities. Information gained through this type cue would become especially important and valuable to an operator of flight craft when separated through accident from visual and auditory cues.

The human engineer should attempt to avoid overloading any one sense modality by determining the one most suitable for receiving various types of information, or through utilization of more than one sense modality in the performance of the operation. This last thought may be particularly applicable in a situation in which a message important to performance of the operation can be not only visually received but perhaps reinforced by an auditory stimulus. The automobile equipped with a buzzer that sounds when a specified speed has been reached is a case in point. The actual selection of the sense modality through which information will be received is dependent on such considerations as the type information to be received, speed of reaction necessary after receiving the information, importance of capturing and holding attention, and adverse environmental conditions in which information will be received.

4. Consider the **intellectual capabilities of the individuals** who will become operators of the man-

machine system. The effective operation of the system is limited by the intelligence, interest, and skill of the operator.

Just as with anthropometric measures, caution should be exercised not to accept a statistical average as indicative of the intellectual capacities around which to design the system. Unless the variability of intellectual measurements is considered, overloading of the individual in terms of his intellectual capacity may result. It was stated earlier in this paper that it is in the area of intellectual functions that man shows his superiority over the machine. Knowledge of this superiority may result in the tendency of many system designers to assign to the machine functions regarded as being somewhat quasi-intellectual, with all other functions that involve high levels of reasoning, judgment, and emergency decision-making assigned to the man. This tendency is dangerous because an individual is limited, as a result of his intellectual capacity, in the performance of tasks that require speedy and accurate reaction to emergency situations, translation of visual displays or interpretation of feedback information, and processing large amounts of complicated data.

The individual is additionally limited regarding the response that he will make if extensive periods of training are required prior to successful operation of the system. It is important to recognize the intellectual capacity of the man-component of the system, to assign to him through the design of the system only those functions for which he is intellectually prepared, and, insofar as possible, provide a design that will minimize learning time. In many instances it may be possible to reduce for the operator the performance of some of the intellectual functions by assigning some part of the function to the machine. For example, instead of supplying the operator with information regarding the number of gallons or tons of fuel remaining in the system, he could almost as easily be supplied with information regarding how much longer he can expect the system to operate with that amount of fuel. In this way the machine processes or interprets the data for the operator and provides a more meaningful feedback of information. Data supplied in this fashion should reduce errors in computation or misinterpretation of visual display information, and at the same time should result in a saving of the time that is needed for the operator to make the translation.

5. Consider the **psychological characteristics** important in the man-machine system. The man-component of the system is a human being; as such, he is subject to the frustrations that arise from his

attempts to adjust to the physical and social aspects of his environment.

*Physical Surroundings.* The designer of the man-machine system should seek to determine the extent to which efficiency of operator performance is dependent upon, or influenced by, conditions in the work environment. Environmental conditions to which the operator may be sensitive could include such characteristics as adverse sound and noise conditions; variable atmospheric conditions of temperature, humidity, and air circulation; illumination regarded as too bright, too low, or involving glare conditions; color preferences; and acceleration-deceleration forces. Ranges of tolerance and sensitivity of individuals to these characteristics should be determined, and methods should be sought for reducing the conditions at the source, such as baffles, heating and air conditioning, ventilation, insulation, and acclimatization devices, or through protective devices such as earplugs, glasses, oxygen breathing equipment, or seat belts.

*Need for Social Contact.* The man-machine system must provide social contact for its operators. Research studies of individuals isolated in cubicles for lengthy periods of time point to the need of the individual for social contact. Man is superior to the machine in his versatility and capability for co-ordinated action. The designer of the man-machine system can capitalize on this superiority through a system design that will allow for social contact.

*Other Needs and Morale.* An additional important psychological factor involves the satisfaction through system design of various innate and acquired needs of the individual, such as the need for security, prestige, and achievement or accomplishment. Lastly, for some time the specialist in work simplification has been aware that design of the work situation has a strong influence on morale of the operators. A system that does not provide for an escape from the performance of routine and repetitious tasks is not conducive to high operator morale.

6. As an end result of an analysis of the influence of each of the preceding concepts on the successful performance of the operator in the man-machine system, the final responsibility of the human engineer is his **recommendation or report to the designer** of the machine component of the system regarding the limitations and capabilities of potential operators. Various "principles" or "laws" regarding design of equipment for human use, published results of related studies, and original research provide the basis for the report made to the system designer. If inferences are to be made from related studies, the researcher should be careful to evaluate similarities of such studies with the unique problem or system being studied. The val-

idity of inferences made from related studies is dependent on similarities in experimental design, subjects, research environment, and type of statistical analysis conducted.

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## *TOTAL CASH FARM INCOME*

### *Georgia's Share of the National Increase*

During the past twenty years Georgia has done little more than hold her own in relative share of the general increase in total cash farm income. The absolute increase from 1935 to 1957 was about \$513 million, with the 1957 figure representing a ratio of 4.44 over 1935. (See the accompanying table. Note that figures include Government payments.) This obviously has meant a great deal of relief for Georgia's rural population, but the gap has grown even wider in income between the rural and urban people, the latter's faster rate of increasing income reflected in many indicators: e.g., the 7.48 ratio of 1956 over 1939 in value added by manufacture<sup>1</sup>—manufacturing usually being concentrated in the larger population centers.

The prevalence of small farms in the states of the Southeast contributes to the area's lower net farm income per person than that for the U. S. as a whole. For 1957 the figure for the U. S. was \$569, and the average for Alabama, Georgia, Louisiana, Mississippi, and Tennessee was from \$254 to \$363.<sup>2</sup> Sixty-four per cent of Georgia farms were comprised of less than 100 acres in 1954, compared to 54 per cent for the U. S. as a whole. However, Georgia farms were generally larger than the average farm in the southeastern region, 73 per cent of all farms in the combined area of the South Atlantic and East South Central States having less than 100 acres.<sup>3</sup>

1. See "Manufacturing: Georgia's Share of the National Growth," *Atlanta Economic Review*, May 1959.

2. Arthur H. Kanter, "The Rural Development Program," *Monthly Review*, March 1959, Federal Reserve Bank of Atlanta.

3. *Statistical Abstract of the U. S.*, 1957, U. S. Department of Commerce.

**GEORGIA'S SHARE OF TOTAL CASH FARM  
INCOME IN SIX-STATE AREA AND U. S., 1935-1957**

Year	Ga. (millions of dollars)	Total Cash Farm Income <sup>1</sup>			Ga.'s % of Total U. S.
		Six-State Area <sup>2</sup> (millions of dollars)	U.S. (millions of dollars)	Ga.'s % of Total Six-State Area	
1935	149	760	7,659	19.6	1.9
1940	172	799	9,109	21.5	1.9
1945	407	2,054	22,295	19.8	1.8
1948	527	2,716	30,800	19.4	1.7
1950	539	2,679	28,795	20.1	1.9
1952	659	3,185	32,906	20.7	2.0
1953	648	3,213	31,339	20.2	2.1
1954	596	2,974	30,210	20.0	2.0
1955	669	3,204	29,785	20.9	2.2
1956	696	3,312	31,093	21.0	2.2
1957	662	3,048	30,773	21.7	2.1
1957 as ratio of 1935	4.4	4.0	4.0		

1. Includes farm marketings and Government payments.

2. Includes Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee.

Source: Statistics on the Developing South, Research Department, Federal Reserve Bank of Atlanta, November 1958.

# *Purchase Plans Of Urban Consumers Compared to Those of Suburban Consumers*

by

Stephen Paranka

## **PURPOSE OF STUDY**

Effective marketing is defined as getting the right product to the right place in the right quantity at the right time at the right price. The judge of what is considered "right" in these factors of effective marketing is the consumer, who has free choice in his spending pattern. In addition, the consumer is at complete liberty to, and does, alter his concept of what is "right" from time to time. This position of the consumer in the economy has become increasingly important with the shift from a seller's to a buyer's market. Plant capacity has been expanded, making possible large-volume production of numerous goods from which the consumer can select his purchases. Also the consumer has the option of varying the amount of income and credit that he will use for purchases from year to year. In order to perform marketing most effectively, manufacturers need information about the consumer's purchase plans.

A logical development toward more effective marketing is the use of surveys of consumer attitudes. These surveys began in 1946 under the direction of the Survey Research Center of the University of Michigan. In 1958, Newsweek magazine became the sponsor of still another national survey of consumer attitudes. One objective of these surveys is the collection of data which can be used as a basis for predicting consumer purchasing behavior. These data have been helpful, but further refinement to effect greater accuracy is desirable.

A basis for increasing the usefulness of surveys of consumer attitudes may be a classification of consumers into two geographical groups—those living in an urban area and those living in a suburban area. The hypothesis of this study is that these two groups of consumers differ in their purchas-

ing patterns, and by studying them separately a consumer goods manufacturer can market his output more effectively.

## **RESEARCH PROCEDURE**

### **Source of Data**

Data to test the stated hypothesis are the results of the third annual Survey of Atlanta Consumer Purchase Plans conducted by the Bureau of Business and Economic Research at Georgia State College of Business Administration in 1958. The questions asked in this survey are essentially the same as those asked in the national survey conducted by the University of Michigan. The survey sample of metropolitan Atlanta is divided into two groups: one group consisting of 254 respondents from the city of Atlanta and another group consisting of 198 respondents from suburban Atlanta. (A group of Negroes included in the original survey is too small in number to test for racial differences in purchase plans. Therefore, these replies are omitted to prevent possible bias.) An analysis of the personal characteristics of the city sample and suburban sample indicates that they represent a full cross section of their respective universes.

### **Statistical Technique Employed**

Data obtained on purchase plans of the urban respondents are compared to corresponding data of the suburban respondents. These two samples can be expected to differ, even if they are from the same universe, because of random errors of sampling. The test of differences between the geographical groups in this study is based upon use of the standard error of difference in each comparison to

allow for the sampling error and to determine thereby if sample statistical differences are significant. The five per cent level is set as the criterion for significance, i. e., if the sample statistical difference could have come about as a result of random errors of sampling five times or more out of 100, then that difference is not considered significant. This five per cent level of significance is very commonly utilized in marketing research studies.

#### STATISTICAL ANALYSIS OF DATA

Four basic categories of data taken from the results of the Survey of Atlanta Consumer Purchase Plans are the bases for testing the study hypothesis. These categories include consumer attitudes about a wide scope of economic conditions: (1) housing purchase plans, (2) consumer durable purchase plans, (3) installment credit attitude, and (4) general economic attitude.

#### Housing Purchase Plans

Analysis of the number of urban and suburban consumers who said they plan to purchase a house during the twelve months after the date of the survey reveals a difference which is not significant. As shown in Table 1, a total of 4.72 per cent of the urban consumers and 7.58 per cent of the suburban consumers replied in the affirmative. This difference could have occurred 22 times out of 100 because of random sampling error, and it therefore is not considered to be significant.

If the number of "maybe" replies is added to the yes answers, the difference between the housing purchase plans of the two groups does become significant. In this instance, 8.66 per cent of the urban consumers and 16.16 per cent of the suburban consumers have some degree of plan to buy a house. This difference could have occurred only about two times out of one hundred because of random sampling error, and it is therefore considered to be significant. Sales opportunity of marketing houses seems to be better in the suburban market than in the urban area.

Home ownership is assumed to be a reasonable guide to anticipated spending for house maintenance. The survey data in Table 1 disclose that 72.05 per cent of urban consumers and 81.82 per cent of suburban consumers possess their own homes. This difference could have occurred only about one time in one hundred because of random sampling error; therefore it is considered to be significant. It is concluded that the suburban market has a larger potential for sale of house-maintenance supplies and service.

#### Consumer Durable Goods Purchase Plans

Durable goods purchase plans are divided into two categories: (1) automobile purchase plans and (2) other selected durable goods purchase plans. Data about automobile purchase plans are shown

TABLE 1  
HOUSING PURCHASE PLANS BY URBAN AND  
SUBURBAN CONSUMERS IN METROPOLITAN  
ATLANTA IN OCTOBER 1958

	Urban Number	Urban Per Cent	Suburban Number	Suburban Per Cent
Do you plan to purchase a house during the next 12 months?				
Yes	12	4.72	15	7.58
No	232	91.34	166	83.84
Maybe	10	3.94	17	8.58
	254	100.00	198	100.00
Do you own your home?				
Yes	183	72.05	162	81.82
No	69	27.16	35	17.68
No answer	2	.79	1	.50
	254	100.00	198	100.00

Source: Primary data from 1958 Survey of Atlanta Consumer Purchase Plans by the Bureau of Business and Economic Research, Georgia State College of Business Administration.

separately in recognition of their importance in the economy. The group of selected durable goods includes purchase plans for refrigerators, stoves, washing machines, television sets, air conditioners, boats and/or motors, and furniture.

An analysis of automobile purchase plans data presented in Table 2 indicates that there is very little difference between urban and suburban consumers regarding these purchase plans. The difference between the 10.24 per cent of urban and 8.58 per cent of suburban consumers who said they planned to buy an automobile during the coming twelve months could have occurred 55 times out of 100 because of random sampling error, and the

TABLE 2  
AUTOMOBILE PURCHASE PLANS BY URBAN AND  
SUBURBAN CONSUMERS IN METROPOLITAN  
ATLANTA IN OCTOBER, 1958

	Urban Number	Urban Per Cent	Suburban Number	Suburban Per Cent
Do you plan to purchase an auto during the next 12 months?				
Yes	26	10.24	17	8.58
No	212	83.46	160	80.81
Maybe	16	6.30	21	10.61
	254	100.00	198	100.00
When do you plan your auto purchase?				
Fall	5	11.90	1	2.63
Winter	4	9.52	4	10.53
Spring	18	42.86	12	31.57
Summer	8	19.05	4	10.53
Following fall	6	14.29	8	21.05
Not given	1	2.38	9	23.69
	42	100.00	38	100.00

Source: Primary data from 1958 Survey of Atlanta Consumer Purchase Plans by the Bureau of Business and Economic Research, Georgia State College of Business Administration.

TABLE 3  
SELECTED DURABLE GOODS PURCHASE PLANS BY  
URBAN AND SUBURBAN CONSUMERS IN  
METROPOLITAN ATLANTA IN 1958

Which of the following do you plan to purchase over the next 12 months?	Urban		Suburban	
	Number	Per Cent	Number	Per Cent
Refrigerator:				
Yes	7	2.76	13	6.56
No	247	97.24	185	93.44
	254	100.00	198	100.00
Stove:				
Yes	11	4.33	13	6.56
No	243	95.67	185	93.44
	254	100.00	198	100.00
Washing machine:				
Yes	11	4.33	19	9.60
No	243	95.67	179	90.40
	254	100.00	198	100.00
Television set:				
Yes	11	4.33	14	7.07
No	243	95.67	184	92.93
	254	100.00	198	100.00
Air conditioner:				
Yes	10	3.94	10	5.05
No	244	96.06	188	94.95
	254	100.00	198	100.00
Boat and/or motor:				
Yes	3	1.18	4	2.02
No	251	98.82	194	97.98
	254	100.00	198	100.00
Furniture:				
Yes	22	8.66	51	25.76
No	232	91.34	147	74.24
	254	100.00	198	100.00

Source: Primary data from 1958 Survey of Atlanta Consumer Purchase Plans by the Bureau of Business and Economic Research, Georgia State College of Business Administration.

difference therefore is not considered to be significant.

Other data in Table 2, however, indicate more definite plans to purchase an automobile by the urban consumer. An analysis of the time when consumers reported they would buy an automobile reveals that significantly more urban than suburban respondents cited a specific period. The 2.38 per cent of urban consumers as compared to 23.69 per cent of suburban consumers who did not cite a specific time period could have occurred by chance less than one time out of one hundred. Additional analysis which indicates that urban respondents have more definite plans to purchase automobiles than do suburban respondents is the former's tendency to cite time periods in the more immediate future. Past studies have shown that the sooner the purchase is planned, the more likely it will be fulfilled.<sup>1</sup> The urban market thus appears to be a slightly more favorable group to whom auto-

<sup>1</sup> Robert Ferber, "The Role of Planning in Consumer Purchases of Durable Goods," *American Economic Review*, XLIV (December, 1954), 887.

mobile salesmen should emphasize selling efforts. A possible explanation for this, based upon the revealed greater degree of home ownership by suburban consumers, is the latter's acceptance of a house as a more important status symbol than the automobile.

There is no significant difference between urban and suburban consumer purchase plans in the survey data for five of the seven selected durable goods shown in Table 3. The two product classes for which there is a significant difference in purchase plans are furniture and washing machines. The difference in the case of furniture purchase plans is highly significant, being possible on a chance basis less than one time out of one hundred. This relationship is probably influenced by the greater number of suburban respondents who own homes as revealed earlier. The difference in urban and suburban consumer purchase plans for washing machines is considered significant because it would be a chance occurrence only three times in one hundred. Larger families in the suburban areas probably influence the greater demand for washing machines there. No significant difference seems to exist in purchase plans of urban as compared to suburban consumers for refrigerators, stoves, television sets, air conditioners, and boats and/or motors. These can all be considered unaffected by geographical location of the consumer within a metropolitan area.

#### Installment Credit Attitude

The importance of installment credit attitude is well recognized in marketing operations, especially in the sale of durable goods. Consumer demand is directly influenced by people's choices to make use of installment credit and to increase or decrease

TABLE 4  
ATTITUDE OF URBAN AND SUBURBAN CONSUMERS TOWARD INSTALLMENT BUYING, METROPOLITAN ATLANTA, OCTOBER 1958

Do you make use of installment credit?	Urban		Suburban	
	Number	Per Cent	Number	Per Cent
Yes	170	66.93	153	77.27
No	79	31.10	41	20.71
No answer	5	1.97	4	2.02
	254	100.00	198	100.00
How much additional amount could you afford as monthly payment?				
Nothing	66	25.99	44	22.22
Less than \$10	35	13.78	19	9.60
\$11 - \$25	73	28.74	54	27.27
\$26 - \$50	31	12.20	44	22.22
\$51 - \$75	9	3.54	9	4.54
Over \$75	26	10.24	21	10.61
No answer	14	5.51	7	3.54
	254	100.00	198	100.00

Source: Primary data from 1958 Survey of Atlanta Consumer Purchase Plans by the Bureau of Business and Economic Research, Georgia State College of Business Administration.

these credit obligations. Varying use of credit by the consumer changes his ability to buy, directly affecting the volume of consumer goods which can be marketed. A presentation of installment credit attitude of urban and suburban consumers is shown in Table 4.

Analysis of data in Table 4 reveals a significant difference in the use of installment credit by urban consumers as compared to suburban consumers in metropolitan Atlanta in 1958. The probability that the difference between the 66.93 per cent of urban respondents and 77.27 per cent of the suburban respondents who use installment credit is caused by random sampling error is less than one chance out of one hundred. Significantly more suburban consumers in this instance made use of installment credit than did urban consumers. It is well to point out that the basis of comparison was

**TABLE 5**  
**ATTITUDE OF URBAN AND SUBURBAN CONSUMERS CONCERNING GENERAL ECONOMIC CONDITIONS IN METROPOLITAN ATLANTA IN 1958**

General Economic Attitudes	Urban Number	Urban Per Cent	Suburban Number	Suburban Per Cent
<b>Family financial condition compared to 12 months ago:</b>				
Better	97	38.19	77	38.89
Worse	47	18.50	40	20.20
Same	106	41.73	79	39.90
Don't know	4	1.58	2	1.01
	254	100.00	198	100.00
<b>Family income compared to 12 months ago:</b>				
More	107	42.13	91	45.96
Less	33	12.99	30	15.15
Same	113	44.49	72	36.36
Don't know	1	.39	5	2.53
	254	100.00	198	100.00
<b>Anticipated income next year:</b>				
More	126	49.61	112	56.56
Less	5	1.97	8	4.04
Same	87	34.25	57	28.79
Don't know	36	14.17	21	10.61
	254	100.00	198	100.00
<b>Economic Conditions in the U. S.:</b>				
Very good	49	19.29	27	13.64
Fairly good	159	62.60	137	69.19
Bad	35	13.78	22	11.11
Don't know	11	4.33	12	6.06
	254	100.00	198	100.00
<b>Feeling about economic conditions in the U. S. during the next twelve months:</b>				
Better times	108	42.52	83	41.92
Worse times	23	9.05	14	7.07
About the same	99	38.98	72	36.36
Don't know	24	9.45	29	14.65
	254	100.00	198	100.00

Source: Primary data from 1958 Survey of Atlanta Consumer Purchase Plans by the Bureau of Business and Economic Research, Georgia State College of Business Administration.

not how many would use credit, but how many actually did.

Further analysis of data in Table 4 reveals that suburban consumers reported they could afford to increase their debt position more than could the city dwellers. The significant difference is in the \$26-\$50 category, wherein the relative comparison between urban respondents and suburban respondents could be caused by random sampling error less than one time in one hundred. This acknowledged ability to carry more credit on the part of the suburban market represents a greater potential toward which marketers can aim their selling efforts.

#### General Economic Attitude

Consumer attitude toward general economic conditions was measured in the survey by asking questions about the family's financial condition, the family's income, and economic conditions in the country. A presentation of the results is shown in Table 5. Although there are numerical differences between the two geographical groups in this category, none of the differences are statistically significant. For example, the largest numerical difference is the 49.61 per cent of urban and 56.56 per cent of suburban consumers who are shown (see Table 5) to anticipate more income in the next twelve months. This difference could have occurred 14 times out of 100 because of random sampling error, and it therefore is not considered to be significant. The prevailing attitudes toward general economic conditions are apparently the same for urban and suburban consumers.

#### SUMMARY

There seems to be some difference in purchase plans of urban consumers as compared to those of suburban consumers. Analysis of data from a survey of consumers in metropolitan Atlanta revealed that the suburban market tends to be a more important one for marketing of houses, house-maintenance supplies and services, furniture, washing machines, use of credit, and ability to enlarge upon present credit obligations. The urban market tends to be slightly more important for the marketing of automobiles. The two markets seem equally important for the marketing of refrigerators, stoves, television sets, air conditioners, and boats and/or motors.

General surveys of consumer attitudes are being used as a basis for predicting purchasing behavior. This study suggests that there are differences in purchase plans of urban consumers compared to suburban consumers. A revision of consumer surveys to regard the urban and suburban markets as distinct entities could possibly enhance the marketing of specific products which are more important in one or the other of the geographical areas. Such an enhancement would be a definite advancement toward the desirable goal of maximum marketing effectiveness.

# *The Challenge of Economic Development in Georgia*

## *A Three Part Series*

By John L. Fulmer

### *Part I. How to Assure Rapid Economic Growth*

There is general agreement that the discovery and harnessing of the atom is the greatest event of this age. As this is the dominant feature of man's progress in the physical world, emphasis on economic growth and development of the backward areas of the world is the distinctive feature of advance in the social sciences. While progress has not been as spectacular as in atomic energy, the accomplishments in the development of laggard areas have perhaps been equally significant for the future of human relations.

The South is a rapidly growing retarded area of an advanced industrial country, and Georgia is typical of the region. Its leaders are working hard at economic development. The accomplishments, while not spectacular, have been important. Although Georgia is not the most rapidly growing southern state, it is surely not lagging many of the states of the region. In contrast with some foreign countries, population pressure is not a problem in Georgia or in the South. It will not be a problem for many years in the future. In an advanced culture, where the standard of living is high and rising, population increase is the primary factor in market expansion. Therefore growth of population is a measure of market growth.

A net loss from out-migration has important market impacts. Since 1950 Georgia has lost about 40 per cent of its natural population increase (births less deaths) because of migration to other states for employment. Under present conditions, the trend of population growth is 1.2 per cent yearly,

whereas it could be 2.0 per cent. In market expansion, this means Georgia's market could be expanding 40 per cent more rapidly than currently if this interchange of population with other states could be brought into balance. At the present rate, by 1970 Georgia's natural increase will amount to about one million people.

Elimination of all movement of people between states is not being suggested. Instead, the need is vital for improvement of job opportunities and cultural and other conditions in order to raise the level of interchange of people with other states. These conditions can be provided only through rapid and aggressive economic growth—that is, at a rate 40 per cent larger than Georgia has experienced since 1950.

With current per capita incomes, a net loss of 30,000 people from Georgia (which is the approximate annual loss on the average since 1950) costs the state's markets \$40 to \$50 million yearly. If this loss can be offset by imports of managerial and other trained administrative personnel, Georgia will more than replace that market loss because the higher economic contribution to the state's economy by such personnel will return materially higher per capita incomes.

#### **Controlling Population Losses**

The extent to which migration drain will be held down and some migrants replaced depends upon the economic policies that Georgia's leaders adopt and put into effect promptly. There are three alterna-

tives. First, there is the "coast-along" policy, which would result in a slowdown, a slackening of economic development. Under such a relaxed policy, chances are that employment would not be held up to the 21,000 yearly rate of increase of the 1950-57 period, nor would expansion in manufacturing jobs be maintained at the 6,000 rate. If this proves to be the policy choice, then migration loss undoubtedly would rise above the 40 per cent drain of recent years. This choice of policy must be avoided at all costs, but there is danger of falling into it by inaction.

The second alternative is that industrial development could be maintained at a level of growth equal to the rate of the last eight or ten years. This might keep the migration interchange at the current 40 per cent disadvantage. This is the policy of the *status quo*, and for that reason it carries the usual dangers of being self-satisfied.

The third policy choice and the one advocated here is that economic development be pursued aggressively on a broad front. This means going further than simple development of manufacturing industries as in recent years. It means, moreover, adoption of measures which will expand all jobs sufficiently to support an increase of 70,000 to 90,000 population yearly instead of 40,000 to 50,000. See Figure 1. The choice is up to the leaders of the state. If they choose this alternative, Georgia will have 300,000 to 400,000 more people and a substantially larger market than with the second alternative, assuming a continued rapid rise in per capita incomes.

It will not be possible to organize and put into effect the program of the third alternative immediately so as to raise quickly the population growth from 50,000 to 80,000 yearly. But it does seem practical to push the program with such vigor as to achieve a balance between population loss and population gain by 1970. This would require stepping up the rate of job creation from 21,000 in the period 1950-57 to 26,700 in 1965 and to 34,800 in 1970. (The yearly rate of increase of nonagricultural employment during 1950-57 was almost 50 per cent larger, due mainly to the necessity of providing jobs for displaced agricultural workers from mechanization.) Since each job created takes care of approximately two and two-thirds persons, population growth would closely parallel these growth rates at a compound rate of increase. This means that the percentage rates of increase in employment and population under the program envisaged would rise from 1.2 per cent currently to 1.7 per cent in 1965, and then to 2.0 per cent in 1970. Employment increases would involve job creation in all categories of Georgia's economy—in manufacturing, trade, government, transportation, finance, and service.

The required growth in manufacturing, a key

development factor because of its impact on other jobs, is projected for an increase of 8,500 jobs yearly in 1965 and 10,300 jobs yearly in 1970, as compared to a growth rate of 6,000 jobs annually in the period 1950-57. In making the projections of manufacturing employment, it was assumed that the industry will continue to account for 29.1 per cent of all nonagricultural jobs.

The growth rates projected in jobs will mean a population increase of around 825,000 persons rather than 500,000 or less if present growth trends continue.

#### **Features of an Aggressive Development Program**

What are the main features of the third alternative, the aggressive development program envisaged for Georgia?

##### *Development in all Segments of the Economy*

Emphasis will need to be placed on development of jobs in all segments of the economy, not just in manufacturing. Inclusion of all areas of the state's economy in the development program will provide over four times as many jobs, since manufacturing accounts for less than one fourth of the state's employment. Urban renewal will therefore become a must. It will cause strong expansion not only of the construction industry but also of retail and service establishments, as well as local manufacturing. Local government will become more efficient and effective.

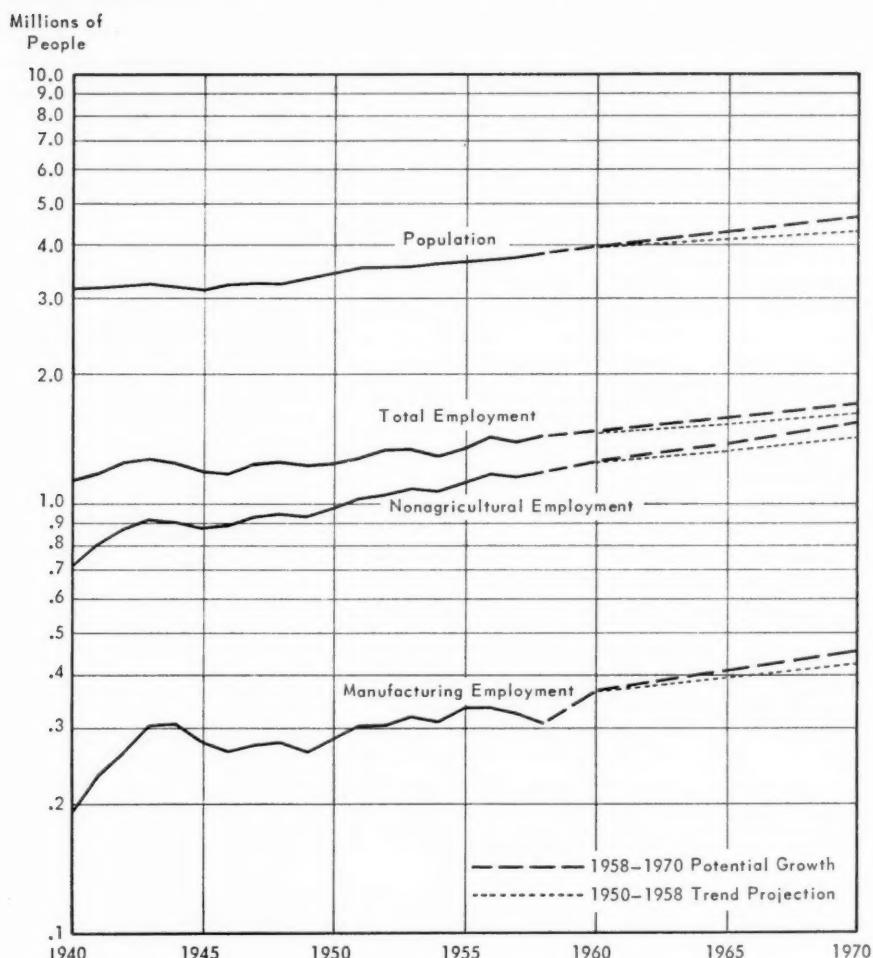
##### *Utilization of Natural Resources*

Available resources, particularly agricultural and forest resources, will need to be developed and utilized. The raw materials of the farms and forests of Georgia are not being used to the fullest advantage by the industries which add to the value of the products of Georgia's farms and forests before they are shipped to market. Not only will this give Georgia a more valuable product to sell, but also it will generate employment in many rural areas of the state. A great volume of products are bought by Georgia's farm families for consumption, and an even greater volume for farm production operations. Here exists a large source of raw materials and market demand that is not fully exploited today in Georgia.

##### *A Managerial Training Program*

The program must place great emphasis on development of industries by local enterprisers. Industrial development agencies and departments in the state government, chambers of commerce, railroads, and other agencies have concentrated on bringing in new industries from outside the state. Large factories have been successfully promoted. Bringing in outside companies to Georgia is a worthy accomplishment, but this sort of program provides only

**POPULATION GROWTH OF GEORGIA FROM 1958 TO 1970  
WILL DEPEND ON NUMBER OF JOBS PROVIDED**



**FIGURE 1**

part of the requirements for economic development of industry in Georgia. It ignores the process of development which proceeds from local resources, which is much more difficult but at the same time is even more essential to a well-rounded and stable economic growth. But, unlike the big factories which find locations eventually and can take care of a wide range of problems necessary for successful operation, the home-grown companies face serious problems in management, marketing, and finance which they are ill-equipped to solve. Most local enterprises are developed by men who are long on technical "know-how" but short on the practices of business administration. In consequence, such companies grow to a certain stage and then stagnate. Their owners combine all major management functions in one person, and they never seem to be

able to take the next step—a reorganization of the company so as to utilize modern management principles. The answer is a managerial training program which will be accessible to operators of small companies in most of Georgia's key cities.

#### *An Apprenticeship Training Program*

The successful development of Georgia's industrial potential would require an apprenticeship training program for labor geared to the growing needs of Georgia's economy. The requirements of finance, both long-term and short-term, are obvious and have been discussed widely. But another need is not so obvious, that of an expanding program to train skilled workers to support the growth of Georgia's industries, present and prospective. The Georgia Department of Labor recently published a

study which shows that manufacturers in the Atlanta area will require 3,400 additional highly-skilled workers by 1962, of whom only 26 per cent are in training. The conclusion is that scarcities of highly-skilled labor exist and are developing to form a bottleneck to rapid industrial development in Georgia.

Inadequate supplies of skilled labor will hinder establishment of branch factories and also slow down the start of new companies by local talent. Some branch operations are absolutely limited by supplies of skilled workers. In the case of local companies, studies show that a majority of new companies, particularly metal-working concerns, are started by machinists and other highly-skilled workers. Now that Georgia has obtained large numbers of assembly plants, major opportunities in the future will be the growth of local companies to supply some of the needs of these plants for parts and subassemblies. If we are to pursue economic development in Georgia aggressively on a broad front, a strong and growing apprenticeship program is a must.

#### The Smaller Companies in Georgia's Future

The lines of advance into the future with a high level of prosperity are obvious. They are simple in that each new job provides for a population increase of nearly three persons. But the easy stages of advance, the importation of branch factories, must be reinforced by actions to develop local companies. Growth will require hard pushing by development experts to develop financial help and managerial training for the owners of small companies and to provide a sufficient number of skilled workers for the more complex industrial development which is the stage now coming to Georgia. The chances are that economic development in Georgia in the next decade or so will be less dependent on the spectacular successes of new branch factories, and more dependent on sound economic analysis applied to the medium- and small-sized companies. Great potentialities exist for developing local companies and entirely new industries. They will be heavily concentrated in the growing centers of the state but some will be located in the hinterland of cities, with occasional new industrial centers being developed in strategic outlying counties.

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Since 60 per cent of the world's paper is consumed in the United States, it is not surprising that "paper and allied products" ranks fifth or sixth among industries in this country in value added by manufacture.

\* \* \*

Multiplying 6,834,872 by 1,488,639 takes a man five minutes or more using pencil and paper, but an electronic computer completed at the University of Toronto in 1952 could multiply 500 pairs of such numbers in two seconds. This seems like fast work, but only a year later the Argonne Laboratory of the Atomic Energy Commission completed a new model, the Oracle, able to multiply 683,487,243,834 by 438,342,784,386 about 2,000 times in one second.

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Nearly 600 different chemicals are available for improving and treating both natural and synthetic fibers, in some thirty different ways, to make them resistant to water, flame, shrinkage, etc.

\* \* \*

Quoted from Newsbriefs—A Clipsheet, Fall 1958, Number 33, issued by The Twentieth Century Fund.

*Of particular interest to corporation officers and directors will be:*

## *A Consideration Of Selected Legal and Accounting Aspects of Corporate Dividends*

by

Otha L. Gray

### **INTRODUCTION AND SCOPE**

#### **The Fiduciary Nature of the Corporation**

The dominant note of corporate dividend legislation and related judicial decisions during the nineteenth century was creditor protection from shareholder actions. The past half century has seen a change in attitude toward the shareholders. Dividend law follows a trend in the law of corporations generally. The line of cleavage which separated the early corporate creditor from the shareholder is slowly disappearing. The shareholder of an enterprise with widespread shareholdings comes to resemble more and more an investor with interests like those of a creditor. Thus corporate management arises as a distinct fiduciary, owing allegiance and accountability to both creditor and shareholder equities as joint contributors to the aggregate corporate asset structure. From the accounting viewpoint, the entity theory of corporate accounting gains stature, and the accurate determining of annual or periodic net earnings becomes increasingly important. Evidences of this trend are reflected in the growing number of statutes of modern origin permitting distributions of current net earnings to shareholders. At the same time the corporate "legal capital" may continue to be impaired as a result of prior accumulated losses.

It is the purpose herein to survey briefly the various theories imposing limitations on, or giving validity to, corporate dividend distributions as a background for specifically considering the current status of corporate dividend regulation under Georgia law. Because of limitations of scope and the existence of authoritative and exhaustive general studies<sup>1</sup> of the origin and development of American dividend law, this article will point up only some of the principal rules and note certain of the problems of application and exceptions relative thereto.

<sup>1</sup> Donald Kehl, *Corporate Dividends*, (New York: Ronald Press Co., 1941); Weiner, *Theory of Anglo-American Dividend Law: American Statutes and Cases*, 29 Col. L. Rev. 416 (1929).

#### **Dividend Declaration—At the Discretion of Directors**

Although the ownership of net earnings is shared by each class of stockholders in accordance with their previous charter agreements, and equally by stockholders within any one class, this sharing of ownership does not entitle them to a dividend in the accounting, financial, or legal sense. Whether to retain or distribute the profits of the corporation is one of the most important questions of financial policy upon which the board of directors must pass judgment. Neither law nor accounting can supply the full answer as the directors gather to consider this vital financial matter. Both law and accounting, however, serve to supply the directors with sufficient criteria by which they may make their decisions or formulate their dividend policies.<sup>2</sup> A discussion of dividend policy itself is beyond the scope of this paper.

The authority of the directors to declare dividends may be defined or limited by the clauses of the corporate charter, bylaws, or the state statute under which the corporation is organized. The power to declare dividends is generally vested in the board of directors. Unless questions of legality are involved, the payment or withholding of dividends is a matter of business policy over which the directors have complete jurisdiction.<sup>3</sup> The shareholders delegate to the directors the control of dividend policy and are bound by their decision as long as the directors act in good faith and no fraud is involved.<sup>4</sup> Only on rare occasions, when the courts have been convinced that the directors were actuated by some motive other than the best interests of the shareholders, have they forced the declaration of dividends.<sup>5</sup> This discretion of the directors in declaring or refusing to declare dividends is held to apply to preferred shares as well as to common shares, except when the

<sup>2</sup> Harry George Guthmann and Herbert Edward Dougall, *Corporate Financial Policy* (3rd ed., New York: Prentice-Hall, Inc., 1955) 505-527; Arthur Stone Dewing, *Financial Policy of Corporations* (5th ed., New York: Ronald Press Co., 1953) 743-807.

<sup>3</sup> Central of Georgia Ry. Co. v. Central Trust Co., 135 Ga. 472, 69 S. E. 708 (1910).

<sup>4</sup> Malone v. Armour Insulating Co., 191 Ga. 146, 12 S. E. (2nd) 299 (1940).

<sup>5</sup> Ga. Code Ann. (1933) 22-710, 22-711.

preferred share contract makes the dividend mandatory if earned.<sup>6</sup>

#### Litigation on Dividend Distribution

The question of legality of dividend distributions is a very complex one because of the lack of uniformity among the laws of the several states. One must therefore look to the specific state statutes in question and to the judicial decisions interpreting the specific statutory limitations within his jurisdiction. Many states which have been popular for years as places for incorporation have had substantial litigation concerning payment and legality of corporate dividends. On the contrary, Georgia has had very little litigation, especially since the enactment of the Corporation Act of 1938,<sup>7</sup> which today is the major source of statutory dividend law in Georgia.

Georgia and the southeastern region are entering a period of great corporate growth, and the question of the legality of dividend distributions will be brought more into the center of attention because of the growing number of corporations being financed by large public offerings of securities. Objections and complaints over dividends are few when shares are of one class, closely held, and also when all financing is done with equity capital. A period of prosperity such as we have enjoyed for the past twenty years also contributes to an absence of litigation over corporate distributions.

#### SURVEY OF HISTORICAL DEVELOPMENT OF DIVIDEND RESTRICTIONS

#### Influence of Corporate Development

Although today the corporate dividend arouses the interest of many groups, prior to approximately 1800 no English or American cases<sup>8</sup> had been decided illustrating the nature of the corporate dividend. This is understandable when it is remembered that the corporate form of organization is a more recent development. The early cases dealt with judicial construction of charter, bylaws, and contractual subscription agreements to pay dividends without defining clearly the term "dividend." This early era was one of special charters and not a period of general incorporation under broad statutes as we know today. The necessity for dividends developed with the concept of permanent capital when the early joint stock companies began to maintain capital from one venture to another rather than go through the process of raising new capital for each new venture. As capital was to be retained, some means had to be devised to distribute periodically to the owners of capital some of the return from their investment or their share of the

profit from the successful ventures. Thus we find developing, as the first limitation upon payment of dividends, the rule that dividends must be paid only from profits. This "profits rule" (discussed later) is today the prevailing English rule and has been adopted in various forms by statute in several American states.

#### Insolvency Rule

An early limitation which is often embodied in corporate statutes, but which may exist in general statutory form or as a part of the common law in absence of statute, is the insolvency rule, which prohibits payment of dividends when the corporation is insolvent or will thereby be rendered insolvent. Whether the insolvency rule is to be applied in the bankruptcy or equity sense of insolvency is not always clear from statute. In the absence of express designation it most likely would be interpreted as the bankruptcy rule of excess of debts over assets. The equity rule of insolvency is the inability to meet debts as they mature even though in a liquidation sense the assets may exceed the debts. In the absence of any statutory provisions limiting payment of dividends there would appear to be no dividend limitation other than charter provisions or the insolvency rule. The insolvency rule is embodied in the general concept of a fraudulent transfer, manifested in either the Uniform Fraudulent Conveyance Act<sup>9</sup> as adopted by the state; some other statutory form of fraudulent conveyance; or, in the absence of statute, the common law rule of fraudulent conveyance as derived from the Statutes of Elizabeth.<sup>10</sup>

#### Capital Impairment Rule

Even though it has been expressed that the corporate capital is a trust fund for creditors,<sup>11</sup> this theory has lost its general acceptance. The nature of corporate capital has become associated with a mathematical limitation or a legal standard rather than being associated with the corporate assets themselves. "Legal capital" is a cushion of protection for creditors and reasonably should be maintained to preserve their margin of security since the shareholder is immune from personal liability for corporate debts. In most instances, however, it is not requisite that legal capital be maintained at any specified amount in the absence of specific statutory provision in the form of capital impairment prohibitions. As long as a corporation is solvent, at least in the bankruptcy sense, it would appear that in the absence of statute the creditors

<sup>6</sup> Henry Winthrop Ballantine, *Corporations* (Rev. ed., Chicago: Callaghan and Company, 1946), Sec. 232, p. 554.

<sup>7</sup> Ga. Acts 1937-38, Ex. Session, p. 214.

<sup>8</sup> Kehl, *op. cit.*, 3 (1941).

<sup>9</sup> Sponsored by National Conference of Commissioners on Uniform State Law; See 9 Uniform Laws, Ann., 1949 supp.

<sup>10</sup> Statute of 13 Elizabeth, c. 5, 6 Stat. at Large (Pilk.) 288 (1570).

<sup>11</sup> Wood v. Drummer, 3 Mason 308; Fed. Cas. No. 17,944 (C. C. Me. 1824).

have no legal cause for objecting to distributions from the corporation which have the result of reducing the corporate capital, either formally through a process of capital reduction or informally by a distribution of capital under the guise of a dividend out of profits.

Authorities<sup>12</sup> who have made exhaustive studies of the development of early dividend law report that the New York Act of 1825 prohibiting corporations from declaring dividends out of capital has been the model for early general corporation statutes of many states. The second of the early statutory models to exert a wide influence on dividend law of many American states is reported to be the Massachusetts Manufacturing Regulation Act of 1830, known as the insolvency rule. A number of the early statutes were later modified. It is important as a matter of statutory construction to observe carefully which of the earlier statutes was copied—the original or the amended version. Thus, in interpreting the statute of a particular state in which there are few local decisions, it is helpful to find the origin of the statutory provision and relevant decisions interpreting such a model in the original jurisdiction.

#### Profits Rule

A third rule of dividend distribution is found to originate in the Delaware statutes and to have been copied in the statutes of several other states, including Georgia. This is the "profits rule," embodied in statute but flowing from the early English rule of allowing distributions from current earnings or profits, even though there may be an existing accumulated deficit and even though original or stated legal capital continues impaired.

#### Summary of Limitations on Corporate Dividends

Although they are subject to varied exceptions, refinements, and applications, the three leading limitations upon corporate dividends may be summarized briefly as follows:

1. No dividend may be distributed when the corporation is insolvent or if it will thereby render the corporation insolvent (Mass. rule).

2. No dividend may be distributed when capital is impaired or will thereby be impaired (sometimes called the balance sheet surplus test, which requires an excess of assets over liabilities and also *legal capital* in an amount equivalent to the dividend to be distributed) (N. Y. rule).

3. Dividends may be distributed only out of earnings or profits of the current or of specified prior accounting periods (Delaware rule).

Many statutes, like those of Georgia, are couched in the alternative of allowing dividends when either the capital impairment rule or the profits rule would permit a valid dividend distribution. Many varieties of the above rules have been devised and are in effect, but few legal rules would coincide perfectly with the accountant's determination or presentation of balance sheet surplus or of periodic net profits. Neither would the determination of legality coincide perfectly with the management's financial dividend policy. The legal rules serve, however, not as guides to dividend policy but rather as limits to dividend distribution. Neither does the accountant claim to present in his financial statements the figure which is legally available for dividend distribution; rather, he accepts the duty of full and fair disclosure of the sources of corporate capital, surplus, and methods used in the determination of periodically reported earnings, leaving matters of financial feasibility and legality to the appropriate decisions of managing directors and their legal counsel. The accountant, in his role of full and impartial disclosure of the financial position of the corporation, at the purported dividend date serves to provide those charged with decision making with sufficient objective and verified data, so that they may make a decision which is both valid in law and feasible in financial operation.

#### PURPOSES OF DIVIDEND REGULATION

Except for the obvious factor of protection to the creditors' margin of security, one might well ask why dividends are regulated. The general purposes served by capital requirements and dividend restrictions have been set out by one distinguished authority as follows:

1. To establish and maintain a basis of financial responsibility to creditors as a condition of the privilege of limiting personal liability.

2. To protect shareholders in their investment by requiring the amount contributed to capital to be retained for the purpose of carrying on the business for which the company was formed.

3. To protect different classes of shareholders against each other, particularly the preferred shareholders against the actions of the common shareholders.

4. To prevent the fraudulent representations of prosperity by declaration of dividends, if paid out of capital, which may be deceptive to creditors and investors and may give the corporation and its securities a credit to which they are not entitled.<sup>13</sup>

In appraising the adequacy and effectiveness of the specific provisions in any dividend legislation, the foregoing statement of principles should serve well as a standard for evaluation.

12 Kehl, *op. cit.*, 11-13.

13 Ballantine, *op. cit.*, Sec. 243, p. 570.

# *The Southeastern Corner*

by  
Warren A. Walker

## **INDUSTRIAL GAINS IN THE SOUTHEAST**

### **Worsted Spinning**

At a time when other parts of the country are reporting serious declines in worsted-spinning activity, the southeastern states report substantial increases. Unfortunately the figures which are available to the writer do not cover quite the same states as are ordinarily included in "The Southeastern Corner." However, by taking four of the states that usually are included (North Carolina, Georgia, South Carolina, and Alabama) and adding Virginia and Delaware we arrive at the figures given below. (These two odd states are numbers four and five in order of importance.)

In this six-state area in December 1949 there were 95,838 spindles in place; in December 1958 there were 293,028 spindles in place, representing a gain of 205 per cent during this period. During this same time, New England, traditional center for this phase of textile activity, reported a decline of 79 per cent.

It should be noted that a New England state, Rhode Island, still has the greatest number of spindles (157,200) for a single state. On the other hand, the next three places are held by southeastern states: North Carolina, 142,056; Georgia, 65,556; and South Carolina, 53,760.

### **Sulfuric Acid**

Sulfuric acid is one of the most important of all industrial chemicals. There seems to be a popular misconception that practically all the manufacture of this chemical is concentrated in the Texas and Oklahoma area. It is true that this area is a major producer; but production is by no means limited to these two states. The South considered by its broadest definition produces approximately half of the total for the United States. Texas and Oklahoma produce approximately one third of the total for the southern region. This means that production within



the six southeastern states still represents a substantial figure on a tonnage basis.

In addition, it should be noted that production of sulfuric acid is often divided into two divisions, new acid and reprocessed acid. In the former classification Florida is the largest producer in the nation. A detailed breakdown is provided in Table 1.

**TABLE 1**  
**PRODUCTION OF SULFURIC ACID, 1958**  
**U. S. AND SELECTED AREAS**

Area	Short Tons
U. S.	15,280,423
Greater South	7,823,943
Florida	1,830,104
Texas	1,600,683
Virginia	469,182
Georgia	302,195
Alabama	243,899

Source: Data from the Department of Census Survey of Industry, obtained from the Atlanta office of the U. S. Dept. of Commerce.

### **Phosphatic Fertilizers**

The three southeastern states of Florida, Georgia, and Alabama produce more than 44 per cent of all phosphatic fertilizers and superphosphates produced in the United States. Florida alone accounts for approximately a third of the total national production, with a 1958 production of more than 789,000 tons.

Again considering the South in its broader interpretation, figures in Table 2 indicate that nearly three fourths of the national total production of phosphatic fertilizers is in this region. Specifically, 149 plants produced 1,775,029 tons of a national total of 2,422,777 tons.

TABLE 2  
PRODUCTION OF PHOSPHATIC FERTILIZERS, 1958  
U. S. AND SELECTED AREAS

Area	Short Tons
U. S.	2,422,777
Greater South	1,775,029
Southeastern States	1,468,507
Florida	789,370
Texas	151,543
Alabama	144,866
Georgia	133,203

Source: Data from the Department of Census Survey of Industry, obtained from the Atlanta office of the U. S. Dept. of Commerce.

#### Utilities and Transportation

For the first quarter of 1959, the production of electrical energy exceeded 32 billion kilowatt hours, an increase of seven per cent over the same period in 1958. In this instance only the six-state southeastern region is under consideration.

The airlines that maintain their home offices in the southeastern region report substantial increases from every source of revenue. These sources include revenue from passengers carried and from ton-miles of air freight and air express. In addition, international airlines that maintain offices in the Southeast, such as Lufthansa, report increased revenues.

Railroads in the Southeast that have for several years been under the multiple strain of active competition, high fixed investment, and high labor costs report improvement in the first quarter of 1959. These gains are in both passenger revenues and ton-miles of freight.

#### Construction

For the six southeastern states usually covered in this series of articles, during the first quarter of 1959 nearly 364,000 workers were employed in contract construction work—an eight per cent gain over the same period in 1958. During the first three months of 1959 just under 39,000 building permits were issued, a gain of 24 per cent over the same period in 1958. The writer has been unable to determine the exact number of building permits for commercial and industrial building during this period, but the volume appears to be holding up quite well, especially in the metropolitan areas.

#### Employment

For the southeastern states as a whole, manufacturing employment was up about three per cent. As of March 31, 1959, there were 1,800,000 workers employed in this classification. Production of goods was proceeding at a twelve billion dollar a year rate. In connection with employment, some states fared better than others, and North Carolina even reported a slight decline in employment compared to the same period in 1958.

#### Well-Diversified Gains

The degree of diversification in the Southeast is too extensive for the region as a whole to come within the scope of a short article, but some idea can be gained from an examination of a single metropolitan area. In this instance we shall consider Atlanta. The figures in Table 3 are for 1957, as the 1958 figures are still somewhat incomplete. Suffice it to say that there has been some additional diversification during the past year and a half.

The figures used limit the Atlanta metropolitan area to Fulton, DeKalb, Cobb, and Clayton counties, and cover some of the variety of items produced in this area.

The total value of all industrial activities in the four-county area in 1957 was slightly under 708 million dollars. More than 88,000 workers were employed in these activities, and they received more than 378 million dollars in wages and salaries. All indications are that all of these figures are substantially higher at the present time. (The 1957 figures are slightly under the 1956 figures covering the same areas of activity because of a general reduction in industrial activity throughout the country.)

TABLE 3  
VALUE OF SELECTED ITEMS  
PRODUCED IN FULTON, DEKALB, COBB, AND CLAYTON  
COUNTIES (GEORGIA), 1957

Item	Value
Food & kindred prod.	\$120,453,000
Textile mill prod.	31,758,000
Apparel & rel. prod.	43,087,000
Lumber & wood prod.	9,280,000
Furniture & fixtures	24,063,000
Pulp & paper	34,409,000
Printing & publishing	46,002,000
Chemicals	28,222,000
Leather & leather goods	2,608,000
Stone, clay, & glass prod.	9,063,000
Fabricated metal	16,589,000
Var. types of machinery	40,794,000
Transp. equip.	262,732,000

Source: Release from the U. S. Dept. of Commerce, dated July 6, 1959.

#### Foreign Trade

During the period January 1 to March 31, 1959, more than a billion dollars worth of foreign trade passed through southeastern ports. The southeastern states are following the trend of the country as a whole in that imports currently represent a higher dollar value than last year, and exports represent a lower value than in 1958.

In a specific comparison of the first quarters of 1958 and 1959 the following figures are obtained: Exports declined slightly over 99 million dollars, from \$699,600,000 in 1958 to \$600,400,000 in 1959. Imports increased slightly more than 71 million dollars, from a figure of \$428,100,000 in 1958 to \$499,-300,000 in 1959.

For the nation as a whole, exports declined by 5.7 per cent and imports increased by 14.5 per cent.

June 1959

## ATLANTA AREA ECONOMIC INDICATORS

Item	June 1959	May 1959	% Change	June 1958	% Change	% Change Six Months '59 over Six Months '58
<b>EMPLOYMENT</b>						
Job Insurance (Unemployment) Payments -----	\$322,645	\$361,788	-10.8	\$824,470	-60.9	-46.3
Job Insurance Claimants -----	5,299	7,858	-32.6	11,066	-52.1	-41.1*
Non-Ag. Employment (Wage & salary, except domestics) -----	354,150	351,350r	+0.8	338,350r	+4.7	+3.6*
Manufacturing Employment -----	86,300	85,850r	+0.5	80,300r	+7.4	+5.1*
Average Weekly Earnings, Factory Workers -----	\$80.60	\$80.60	0.0	\$77.39r	+4.1	+10.0*
Average Weekly Hours, Factory Workers -----	40.3	40.1	+0.5	40.1	+0.5	+3.4*
Index of Help Wanted Ads (Seasonally adjusted, 1947-49 Avg.=100) -----	189.4	176.7	+7.2	118.2	+60.2	+51.7
<b>CONSTRUCTION</b>						
Number of Building Permits§ -----	987	792	+24.6	785	+25.7	+9.4
Value of Building Permits§ -----	\$9,639,240	\$9,169,884	+5.1	\$5,278,350	+82.6	+17.0
Employees -----	25,250	23,700r	+6.5	21,800r	+15.8	+23.7*
<b>FINANCIAL▲</b>						
Bank Debits (Millions) -----	\$1,980.7	\$1,927.8	+2.7	\$1,625.5	+21.9	+19.3
Bank Deposits (Millions) -----	\$1,244.9	\$1,223.4	+1.8	\$1,189.8	+4.6	+8.2**
<b>OTHER</b>						
Department Store Sales Index (Adjusted 1947-49=100) -----	174	161	+8.1	169	+3.0	+6.0†
Retail Food Price Index -----	117.1	115.6	+1.3	119.2	-1.8	-1.8**
Number of Telephones in Service -----	359,560	334,049	+7.6	314,854	+14.2	+14.2**
Consumer Price Index -----	125.5	(Mar) 124.3	+1.0	124.9	+0.5	+0.5**

r—Revised

\*Average month

\*\*End of period

†—Based on retail dollar amounts

§City of Atlanta only.

N. A.—Not Available

▲Data from members of the Federal Reserve System only.

\*New series. Covers unemployed Federal employees and unemployed veterans in addition to those covered by Georgia law. Claimants include both the unemployed and those with job attachments but working short hours.

Sources: All data on employment, unemployment, hours, and earnings: Employment Security Agency, Georgia Department of Labor; Number Help Wanted Ads: Atlanta Newspapers, Inc.; Building permits data: Office of the Building Inspector, Atlanta, Georgia; Financial data: Board of Governors, Federal Reserve System; Postal data: Atlanta Post Office; Retail Food Price Index: U. S. Department of Labor; Department Store Sales Index: Federal Reserve Bank of Atlanta and Board of Governors, Federal Reserve System; Telephones in Service: Southern Bell Telephone and Telegraph Company.

## ATLANTA BUSINESS ACTIVITY

The end of the first half of 1959 found business booming in Atlanta and local business analysts agreeing almost to a man that the second half will be a period of even greater prosperity than the first. Ample evidence of the increasing liveliness of business activity can be found in the indicators on the opposite page. Every one of these indicators shows marked improvement during the first six months of 1959 in comparison with the same period of 1958.

Especially important is the continuing drop-off in the number of claimants for job insurance payments and the total dollar amount of these payments. Job insurance claimants fell during June to the lowest number recorded since September 1957, and the dollar amount paid out fell to the lowest point since December 1956! Unemployment at 14,850 was 3.6 per cent of the labor force and 9,300 fewer than June a year ago when the unemployed were 5.9 per cent of the total labor force.

In June, nonagricultural employment rose to 354,150, the highest point on record for the city, surpassing by 1,250 the previous high of December 1956. All major industry segments also reported substantially higher employment for June 1959 than for June 1958. Construction employment, which is subject to strong seasonal influences, has risen constantly and rapidly since reaching a seasonal low in February. The sharp rise since that time has brought the number employed to 25,250, which is the highest point on record for this industry. Manufacturing employment has increased every month this year, and in June 6,000 more people were employed by this industry than in June of the year before, primarily because of more business in transportation equipment industries. But in spite of this increase, the total number employed was 4,700 below the October 1955 figure, which is the record-high month, and most of the loss has been in the durable goods industries.

Construction activity continued at a high level in both June and July. The 987 permits issued by the Inspector of Buildings of the City of Atlanta in June was the largest number for that month since June of 1953. In July, 718 permits were issued, and this was higher than June of either 1958 or 1957. The valuation assigned the permits issued in June

totaled \$9,639,240. Those issued in July were assigned a valuation of \$9,503,817, making the third straight month in which valuation exceeded nine million dollars. At the end of July, valuation for the year exceeded that for the same period of 1958 by 22.6 per cent.

The Federal Reserve Bank of Atlanta has reported that debits at reporting banks in Atlanta rose during the first six months of 1959 to a point 14 per cent above the first six months of 1958. The percentage increase at all reporting banks in Georgia was the same—14 per cent. Other increases over the state were: Macon, 16 per cent; Columbus, 9 per cent; Augusta, 12 per cent; Albany, 13 per cent; Gainesville, one per cent; Rome, 14 per cent; Athens, 8 per cent; and Marietta, 21 per cent; Valdosta, 28 per cent; Brunswick, 25 per cent; and LaGrange, 14 per cent.

Another point the Bank analyst made in connection with the data was that the volume of checks and other withdrawals from reporting banks in Georgia was up 16 per cent in June 1959 from June 1958, with increases occurring in all major trade centers except Gainesville.

Bank debits in Atlanta, aside from a seasonal decline in February, seem to have made a major advance in the first six months of 1959, moving sharply upward from the trend established from 1952 to 1958. This is indicative of a rise in spending, perhaps the best indicator of total spending and, hence, business activity; but the Bank analyst issues the reminder that an unusually large single transaction in a particular place can affect the total figure for that place for the period.

The increased tempo of business activity in Atlanta has been accompanied by a slight rise in the Consumer Price Index. From 124.9 in June of 1958 the index crept up ever so slightly to 125.5 in June of 1959. Food prices in Atlanta are still quite a bit lower (1.8 per cent) for the "average" family than in June last year. Higher are housing (+0.9 per cent), transportation (+2.8 per cent), medical care (+5.5 per cent), personal care (+2.1 per cent), and reading and recreation (+1.8 per cent). Apparel cost in the index was down 0.5 per cent.

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